



RESPONSES TO COMMENTS OF THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY ON THE CONSENT DECREE AND ASSOCIATED PERMITS

The following are the responses of the Colorado Water Quality Control Division (WQCD) to the comments of the United States Environmental Protection Agency (EPA) on the WQCD's proposed Consent Decree with Sunnyside Gold Corporation (SGC) and associated permits. The responses are arranged and numbered in the same manner as EPA's comments.

COVER LETTER

Comment: In its letter, EPA states that the permits must function as stand alone documents regardless of the existence of the Consent Decree.

Response: The WQCD agrees. The permits were reviewed to find any terms or conditions that through reference were dependent upon the contents of the Consent Decree. Where such permit conditions were found, they were revised to more explicitly describe the intended permit requirements. However, there is one exception to this that should be noted. Each draft permit included a termination clause which referred directly back to the Consent Decree. While this clause was modified to additionally require compliance with State permit regulations, it was determined that it would not be practical to include the Consent Decree's conditions related to permit termination within the permits themselves. Also, the termination clauses do not affect the enforceability of the permits. For these reasons, the termination clauses' references to the consent decree were retained.

CONSENT DECREE

- Comment: Page 12, Paragraph 8: Although Section VIII states the "A List" projects must be completed prior to a permit termination request, it would be clearer to state that in this section. Suggested change/addition: "After completion of the "A List" projects, SGC may request a Permit Termination Assessment. Within sixty days of a request by SGC, the Division will complete a Permit Termination Assessment pursuant to Section VIII of the Consent Decree."*

Response: The WQCD believes that the suggested change would confuse, rather than clarify the Consent Decree, and declines to make the suggested change to the Consent Decree. Paragraph 8 clearly states that a Permit Termination Assessment must be performed pursuant to paragraph 14 of Section VIII. This paragraph lists seven criteria which must be met for a Successful Permit Termination Assessment, one of which is completion of "A" list projects. To list, in paragraph 8, only one of these

seven criteria as a prerequisite for a Permit Termination Assessment would be confusing and may appear to alter the intent of the Consent Decree.

2. *Comment: Page 13, Paragraph 8.c. and Page 24, Paragraphs 22: EPA's position is that permits are required for discharges of groundwater tributary to surface water. Therefore, EPA's preference would be to remove all references to this issue from the Consent Decree. We understand that due to the nature of this case that may not be possible. Therefore, we would suggest the sentences on page 13, paragraph 8.c. and page 24, paragraphs 22 be removed and replaced with language as follows: "The Division agrees, based on the facts of this case, that in the event of a Successful Permit Termination Assessment pursuant to paragraph 14, no future CPDS [sic] point source permits will be required of SGC for seeps or springs which emerge or increase in the Upper Animas River or Cement Creek drainages following installation and closure of bulkhead seals in the American or Terry Tunnels."*

Response: Seeps and springs are the central issue in this case, and therefore it would be impossible to delete references to them. SGC brought this declaratory judgment suit because it disagrees with the WQCD's position that seeps and springs which may emerge following installation of bulkhead seals in the mines's portals are enforceable against SGC as violations of the Colorado Water Quality Control Act as the discharge of pollutants to state waters form a point source without a permit. The WQCD does not concede this issue by entering into the Consent Decree. EPA's proposed language adds the words "the Division agrees, based on the facts of this case." This is not a substantive change and is already clear in the language of the Consent Decree. The Parties agree to make the requested change.

3. *Comment: Page 13, Paragraph 9.a., Page 19, Paragraph 11 and Appendix B: The summary of work provides a brief discussion of the plugging of the Terry Tunnel. It does not mention the need to add buffering amendments to the fluid behind the bulkhead during the flooding of the workings. It was our understanding that this action was agreed upon as a means of raising the pH to reduce dissolved metal loading in the workings. This is a critical element of the mine plugging proposal and should be mentioned in the summary.*

Response: EPA incorrectly states that the summary of work does not mention the need to add buffering amendments to the fluid behind the bulkhead during the flooding of the workings. The summary of work, subparagraph b, mitigation projects, clearly states that SGC will complete all of the "A" list projects as set forth in Appendix B, one of which is the injection of alkaline water referred to here. The schedule established in section VII on pages 19-20 establishes when this mitigation project will be done.

Comment: Prior to commencing injection of the alkaline water into the mine pool, approvals from the Underground Injection Control Program by a rule authorization or

a permit may be needed.

Response: SGC has submitted to EPA a letter requesting a determination if it is subject to a UIC permit, and if so, if it fits under the general permit.

Comment: *The target pH in the workings (or pH range) should also be mentioned.*

Response: The specifics of the mitigation projects, including the mine pool mitigation project (with target pH ranges for the injection water and Mine pool), are appropriately discussed in the Work Plans for the projects attached to the permit for mitigation projects (Appendix C). See also response to Appendix B comment 1.

4. **Comment:** *Pages 13 and 14, Paragraph 9.a.: For the determination of equilibrium - what is meant by the "rate of rise has leveled off"? EPA suggests adding another appendix to the Consent Decree which describes the process for determining if equilibrium has been met. Does the notice by SGC that equilibrium has been reached need to provide supporting data and describe how SGC reached that conclusion? The text is a little unclear concerning what exactly is required to be provided. Is it appropriate to reference the Mined Land Reclamation (MLR) Permit and technical revisions?*

Response: The WQCD's entering into this Consent Decree is partly in response to the approval by the Mined Land Reclamation Board of SGC's proposal to install bulkhead seals in the Sunnyside Mine portals. Mine pool equilibrium is defined in SGC Mined Land Reclamation permit, as stated in the Consent Decree. The WQCD is providing EPA that portion of SGC's Mined Land Reclamation permit. That determination is within the jurisdiction of the Division of Minerals and Geology, not the WQCD. Therefore, neither adding another appendix to the Consent Decree describing when equilibrium has been met nor referencing the MLR permit (other than the existing references to it on pages 4-5), as suggested by EPA, would be appropriate.

Comment: *What does "maintenance" of the portion of the American Tunnel downstream of the SGC property mean? This term should be defined so it is clear what action(s) will trigger the release of SGC from its permit for the American Tunnel.*

Response: EPA states that the term "maintenance" is unclear in the sentence "Should maintenance of the portion of the American Tunnel downstream of the SGC property line seal and treatment of the American Tunnel discharge be undertaken by the property owner or other parties, then SGC will be released from any continued CDPS permit obligation at the American Tunnel." This sentence is taken from the summary of work, which work is described in greater detail in other parts of the Consent Decree. This sentence follows another that clarifies that this sentence is relevant only

if there are continuing discharges from the American Tunnel. The critical issue is that SGC not be released from its permits if discharge continues unless another party or parties has assumed treatment of American Tunnel discharge water. Because the clause beginning with the word "maintenance" is conjunctive with the clause beginning with the word "treatment," so that both maintenance and treatment are required, a definition of the word "maintenance" has little or no import. This requirement is also set forth in paragraph 14a, establishing one of the criteria for a Successful Permit Termination Assessment as follows: "Hydrologic controls and seals eliminating flows from the lower American Tunnel portal have been completed, or CDPS Permit No. CO-0027529, for water treatment at the American Tunnel, will have been accepted by another party or parties."

5. *Comment: Page 15, Paragraph 9.b. and Page 21, Paragraph 13: Work plans for each of the mitigation projects covered by the draft permit CO-0044768, and listed in Appendix B, should be reviewed and approved through the permit process.*

Response: Work Plans for the "A" and "B" list projects are attached to the permit and have been reviewed and approved as part of it. Any Work Plans for additional remediation projects will be reviewed and approved by the WQCD through the permit process.

Comment: A specific time frame for receiving additional workplans should be established in the Consent Decree and mine remediation plan permit. We suggest wording similar to: "If SGC notifies the Division that they intend to perform additional remediation projects, then SGC will submit work plans within sixty (60) days of the notification or within a reasonable timeframe based on the accessibility of the site for planning and the complexity of the project."

Response: The parties agree to change the first two sentences of paragraph 13 (page 21) to read as follows:

In the event that the Permit Termination criteria of paragraph 14 below are not met following completion of all the mitigation projects on both the "A" and "B" Lists, within sixty days after the Division notifies SGC of such a determination, SGC will notify the Division whether or not it intends to propose additional remediation projects which are anticipated to have a positive impact on the water quality of the Animas River. If SGC determines that it will propose additional such projects, it will submit proposed Work Plans to the Division within sixty days of the notification or within a reasonable timeframe based on the accessibility of the site for planning and the complexity of the project.

6. *Comment: Page 15, Paragraph 9.c. and Page 22, Paragraph 14.g.: We are pleased with the commitment to treat Cement Creek in order to mitigate short-term impacts and to allow a "buffer" until the mine remediation projects have adequate time to improve water quality. However, we have some concerns regarding a lack of specificity concerning Cement Creek treatment in the Consent Decree. We have three main issues regarding Cement Creek treatment:*

1) quantity of flow to be treated during which months;

Response: As stated in paragraph 9 (page 15) of the Consent Decree, the stream diversion bringing Cement Creek into the treatment facility will be regulated in volume so as to use the full capacity of the American Tunnel treatment facility. Essentially all of the stream flow in the low flow months will be treated and the equivalent stream flow lost to the treatment system due to mine sealing will be treated during high flow.

Comment: 2) what will trigger the cessation of treatment of Cement Creek;

Response: Cement Creek will be treated during the time period that mitigation projects are being completed by SGC. Following the completion of all "A" list mitigation projects, SGC may reduce or eliminate the treatment of Cement Creek at the American Tunnel treatment plant. SGC will notify the Division ten business days prior to making changes in the quantity of flows of Cement Creek being treated relative to their treatment plant capacity. In its notification to the Division SGC will provide its analysis that water quality will be maintained at the reference point (A72) with the decreased treatment of Cement Creek flows. The parties to the Consent Decree have agreed to modify the language of paragraph 9c to reflect this.

Comment: 3) how long will SGC have to maintain a zinc concentration at the reference point or below the 12-month moving average in order to be released from treating Cement Creek;

Response: The Consent Decree requires specified actions on the part of SGC should water quality deteriorate at the Reference Point. SGC may decrease or eliminate treatment at Cement Creek following proper notification to the Division as discussed, provided that the required mitigation projects have been completed.

Comment: 4) the response to exceedances of the monthly zinc average.

Response: Page 4a of Appendix A details the responses SGC will take in the event that the monthly zinc average is exceeded. This section has been modified to clarify the time frames required for submission of Work Plans for additional work projects and construction of those projects if the A and B list projects already have been completed. See response to Consent Decree comment 5.

7. *Comment: Page 16, Paragraph 10 and Appendix A, Attachment 1: Monitoring detection limits set within the Consent Decree are fine. However, additional reference should be made to monitoring methods approved in 40 CFR Part 136.*

Response: As required by the Colorado Discharge Permit System Regulations, 6.1.0 (5 CCR 1002-2), the permits included in Appendix C contain the reference to analytical methods approved in 40 CFR Part 136. The Consent Decree contains actual detection limits which are extremely low and more specific than the methods contained in 40 CFR part 136. The WQCD believes that these limits provide an appropriate level of data quality control.

Comment: Furthermore, diel (24-hour) fluctuations in flow and concentrations observed in the stakeholders sampling efforts make it difficult to compare data taken at different times of day within the Animas Basin. Therefore, we recommend that Appendix A, attachment 1 have time of day references and that all future sampling be taken within similar time frames, particularly during runoff periods.

Response: The reference data set is made up of individual observations taken over a number of years without regard to diel fluctuations. The Division does not agree that there should be strict time-of-day limitations on data collection efforts within the Consent Decree. Comparison of a highly controlled data set with one that did not have those controls would introduce confounding and confusing factors for the analysis. There also may be access and safety concerns for sampling during some seasons and times of day.

8. *Comment: Page 17, Paragraph 10.a. (iii): The Consent Decree requires monthly sampling of the American Tunnel Treatment Facility Effluent. Is this the same location as outfall 004A specified in the permit? If so, it should so indicate.*

Response: Yes, the monthly sampling of the American Tunnel Treatment Facility Effluent is the same location as outfall 004 specified in the permit. The Consent Decree has been clarified.

9. *Comment: Pages 17 and 18, Paragraph 10.b.: The sampling at the four mines identified in this section must include flow measurements in order to determine if the plugging has resulted in loading changes.*

Response: A commitment to carry out flow monitoring is included in each of the Work Plans for the four mentioned mines.

Comment: The monitoring requirements of the MLR Permit should also be mentioned.

Response: The Consent Decree already states in paragraph 10 that "[t]he monitoring

requirements of this Consent Decree are separate and in addition to any monitoring requirements of SGC's CDPS permits and MLR permit." Copies of the monitoring requirements in the DMG permit will be submitted to EPA for informational purposes.

Comment: Because this information is not part of the Consent Decree or the permits, we suggest that SGC be required to identify springs and seeps in the vicinity of these locations and sample them if the flow increases measurably.

Response: The DMG reclamation permit contains requirements for monitoring springs and seeps in the vicinity of the SGC mine workings. Both flow and water quality measurements are required. The WQCD will consider supplementing these monitoring efforts as part of its continuing commitment to assessing and improving water quality in the Upper Animas River Basin.

10. *Comment: Page 23, Paragraph 19: The permit number should be C0-0027529 for the American Tunnel.*

Response: The WQCD agrees and the correction has been made.

11. *Comment: Page 24, Paragraph 22: Permit release language should apply to SGC only.*

Response: The Consent Decree has been clarified so that the release language applies only to SGC and its parent company.

12. *Comment: Page 24, Paragraph 24.a.: It is our understanding that the permits can only be terminated according to the criteria specified in the Permit Termination Assessment (paragraphs 12, 13, 14, and 15). Reference to this process should be contained in paragraph 24.a. This paragraph should be reworded to state that, "The Division agrees, based on the facts of this case, that in the event of a Successful Permit Termination Assessment pursuant to paragraph 14, no future CPDS [sic] point source permits will be required of SGC for seeps or springs which emerge or increase in the Upper Animas River or Cement Creek drainages following installation and closure of bulkhead seals in the American or Terry Tunnels."*

Response: See responses to comments 2 and 11.

13. *Comment: Page 26: The conditions when the State can draw on the surety and the purposes for which the State can use the surety funds are very restrictive. It is our understanding that the funds can only be used if Sunnyside is bankrupt and discontinues treatment of water necessary to maintain water quality. We recommend that the State have access to the surety if SGC fails to perform as required in the Consent Decree, no matter what the reason for the failure to perform or if SGC*

prematurely terminates the Consent Decree. Additionally, we would recommend that Echo Bay agree to be a guarantor for full performance of the Consent Decree.

Response: EPA's understanding is correct, and the WQCD declines to change the intent of the Consent Decree.

Comment: Furthermore, use of the term bankrupt is ambiguous. What does become bankrupt mean? Does this mean SGC has filed for bankruptcy, does it mean that SGC has been adjudicated bankrupt by a court, or does it just mean SGC is out of money?

Response: The parties agree to change the language in the Consent Decree from "becomes bankrupt" to "files for bankruptcy or becomes bankrupt."

Comment: Finally, the State is restricted to use the surety funds only to enter and operate the treatment facility at the American Tunnel. We recommend that the surety be available to allow the State to complete any work SGC is required to perform under the Consent Decree. For instance, if SGC were to go bankrupt before they complete the A list projects, the surety should be available to complete these projects, if the State so chooses.

Response: The WQCD declines to change the intent of the Consent Decree.

APPENDIX A TO CONSENT DECREE

1. *Comment: Page 4.a., Paragraph 1: The response to exceedances of the monthly zinc average at the reference point needs further definition. SGC should automatically be required to investigate possible causes of elevated zinc values rather than waiting until after a meeting with the State. How long does SGC have to lower the zinc levels if a problem occurs? Subsequent to the investigation period which should last a maximum of sixty (60) days, SGC should be required to submit an investigation report and a mitigation plan to the State.*

Response: This matter has been clarified on page 4a of appendix A to the Consent Decree. The initial action if any is deemed necessary, will be for SGC to investigate possible causes of the elevated zinc values. If the cause cannot be explained by known activities not related to mine closure taking place in the affected basin, SGC will respond by increasing the treatment of Cement Creek if such treatment has been decreased or eliminated following completion of the mitigation projects or by implementing one or more of the B list projects. Since the B list projects will have already been approved and permitted construction of the B list projects could begin at any time weather conditions allow. If the B list projects already have been completed SGC may add additional mitigation projects to address deteriorating water quality at.

the reference point. If SGC notifies the WQCD that they intend to perform additional remediation projects, then SGC will submit work plans within 60 days of the notification or within a reasonable time frame based on the accessibility of a site for planning and the complexity of the project. The project will be constructed during the first full construction season which is available after submission and approval of the Work Plan.

2. *Comment: Pages 4.a. and 5.a.: The copy of Appendix A we received had several blanks referencing the paragraphs in the Consent Decree. These blanks need to be completed.*

Response: These blanks have been completed, with paragraph numbers 13, 14, and 8, respectively.

APPENDIX B TO CONSENT DECREE

1. *Page 1.b, Part B-2(1), Sunnyside Mine Pool; The plan calls for raising the pH in the Sunnyside Mine to a range of 8 to 9. We are concerned that the range of pH may not be high enough to handle the zinc and copper concentrations. A pH range of 10 to 11 would appear to be a more realistic range to assure adequate precipitation of metals within the mine pool. There is no indication as to how the pH for the injection or the pH in the mine pool will be monitored and adjusted. Either there should be a requirement for monitoring the mine pool in sufficient locations to assure that the pH is in the target range or the concentration at the point of injection should be specified. The concentration at injection should be sufficiently high to achieve the ultimate range of pH throughout the mine pool at equilibrium.*

Response: The alkaline injection project will target a pH of 9.0 to 10.0 in the mine pool. The injection pH will be periodically adjusted based on benchscale testing to achieve a target injection pH level of 12.0. In addition, to extend the period during which alkaline injection is possible, the point of injection has been relocated to the pipe through the bulkhead seal within the Terry Tunnel.

2. *Comment: Pages 1.b, 2.b and 3.b: The plans for mine waste dumps and tailings removals do not mention removal of the contaminated material underlying the waste rock or tailings. Experience at the Eagle Mine and Chalk Creek indicates that a significant amount of contaminated soil will be under the piles. This should be removed and new soil should be placed in the excavation prior to any attempt at revegetation. If this does not happen, the revegetation effort will be subject to failure and the groundwater and surface water leaving this area will show a significant increase in metals. These projects should be undertaken with specific soil sampling plans and removal criteria to assure that the highest level of metals contaminated material is removed. Criteria for soil cover after removal of the material should also*

be stipulated.

Response: The WQCD recognizes the potential relevance of this concern at several of the sites in the Consent Decree. This issue has been addressed in the project Work Plans. Generally, as complete of removal of mine waste and contaminated material as is practicable will be achieved. Soil amendments will be added to topsoil materials and mine waste will be covered with 14 to 16 inches of soil material. Where mine waste is removed, revegetation is required to be done in accordance with the relevant provisions of the Rules of the Mined Land Reclamation Board.

PERMITS

1. **Comment:** *For all Permits DMRs need to be sent to EPA's new address:*

*U.S. Environmental Protection Agency (8ENF-T)
Office of Enforcement, Compliance and Environmental Justice
Technical Enforcement Program
999 18th Street, Suite 500
Denver, CO 80202-2466*

Response: Permits will be sent to EPA's new address.

Permit for Mitigation Projects CO-0044768

2. **Comment:** *The draft permit for the Sunnyside Gold Corporation (SGC) Mine Remediation Projects lacks specific conditions for environmental control. The draft permit only requires full implementation of the Mine Remediation Plan (MRP), however criteria have not been established for the contents of an MRP. As written, the permit does not contain necessary technology based controls, as required by Federal regulations.*

At a minimum, the draft permit for SGC must include specific requirements for all MRPs. We feel that these requirements should be similar to the those for the storm water management plans (SWMPs) for inactive mines as drafted by CDPHE for the draft General Permit for Stormwater Discharge Associated with Metal Mining Operations and Mine-Waste Remediation (Permit Number COR-040000, Parts I.C.1 - I.C.6). A particular emphasis should be placed erosion control during and after (revegetation) the remediation project.

Additional SWMP requirements related to plan preparation, implementation, retention, submittal, review and approval by CDPHE, plan changes, non-stormwater discharges, inspections SWMP availability, and procedures for covering additional

projects must also be added to the permit. For those projects where adits are present, requirements related to adit closure or treatment should be added to the permit to address flow other than storm water.

The MRPs will need to be modified to be in compliance with these permit conditions. Review and approval of the work plans should be through the permit process rather than the consent decree.

Response: The Mine Remediation permit has been revised to incorporate criteria which are very similar to the requirements of the above-referenced sections of the General Permit for Stormwater.

The Mine Remediation permit has been written as an individual permit instead of a general permit, and must be amended to include any additional MRP's or modify MRPs. Also, this Mine Remediation Permit was intended to cover more than just stormwater discharges. Because of these differences, the suggested changes were determined by the Division to be inappropriate.

In those cases where adits are present, the receiving streams have been classified such that there is no need for treatment of adit flows, provided the activities of the permittee do not increase the loading of pollutants from such discharges. In all cases, the permittee has submitted MRP's that either will not affect adit discharges, or will reduce or eliminate pollutant the loading of pollutants being discharged.

American Tunnel Permit CO-0027529

3. *Comment: After reviewing data from the existing facility, EPA believes that there is a reasonable potential for toxicity at this site under present conditions. EPA understands that once treatment of Cement Creek begins and the tunnel discharges lessen, there is likely to be an overall reduction in toxicity of Cement Creek below the facility. However, until it can be shown that there has been a substantial reduction in toxicity of Cement Creek downstream of the tunnel discharge (over present conditions) Whole Effluent Toxicity (WET) monitoring and limits should apply to the Discharge.*

Response: Cement Creek is not classified for aquatic life use. Therefore, it would be inappropriate to perform instream WET testing for Cement Creek. The first downstream segment classified for aquatic life is the Animas River. While the Division is concerned about controlling the toxic effects of the American Tunnel upon the Animas River, it would also be inappropriate to perform any instream WET testing there, due to the large number of other pollutant sources that may also be contributing toxicity.

Instead, the Division has relied upon calculations involving flows and pollutant

concentrations to show that treatment of Cement Creek will reduce significant pollutant concentrations at the mouth of Cement Creek. Since toxicity is most often demonstrated, and may be defined by the presence of a concentration vs toxicity relationship, where an increase in concentration results in an increase in toxicity, it can be argued that a reduction in pollutant concentrations at the mouth of Cement Creek is likely to also produce a reduction in toxicity.

However, in order to maintain consistency with other permits, the permit will require continued WET monitoring and limits until the treatment of Cement Creek begins. This will be accomplished through the addition of a separate outfall for WET testing.

Terry Tunnel Permit CO-0036056 - - - - -

4. *Comment: The Terry Tunnel discharge permit should contain a schedule for termination of the discharge. Emergency discharges and those related to maintenance should be addressed through standard language contained in the permit.*

Response: The Terry Tunnel discharge permit was revised to require elimination of the discharge by 12/31/96.